

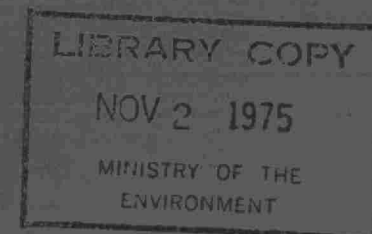
OPERATING SUMMARY

TOWN OF

ROCKLAND

WATER TREATMENT PLANT and
WATER POLLUTION CONTROL PLANT

LABORATORY & RESEARCH BRANCH
MINISTRY OF THE ENVIRONMENT



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ROCKLAND
WATER TREATMENT PLANT
and
WATER POLLUTION CONTROL PLANT

MINISTRY OF THE ENVIRONMENT

1974 ANNUAL OPERATING SUMMARY

prepared by

Plant Performance Unit

TECHNICAL SERVICES BRANCH

T. Cross, Director

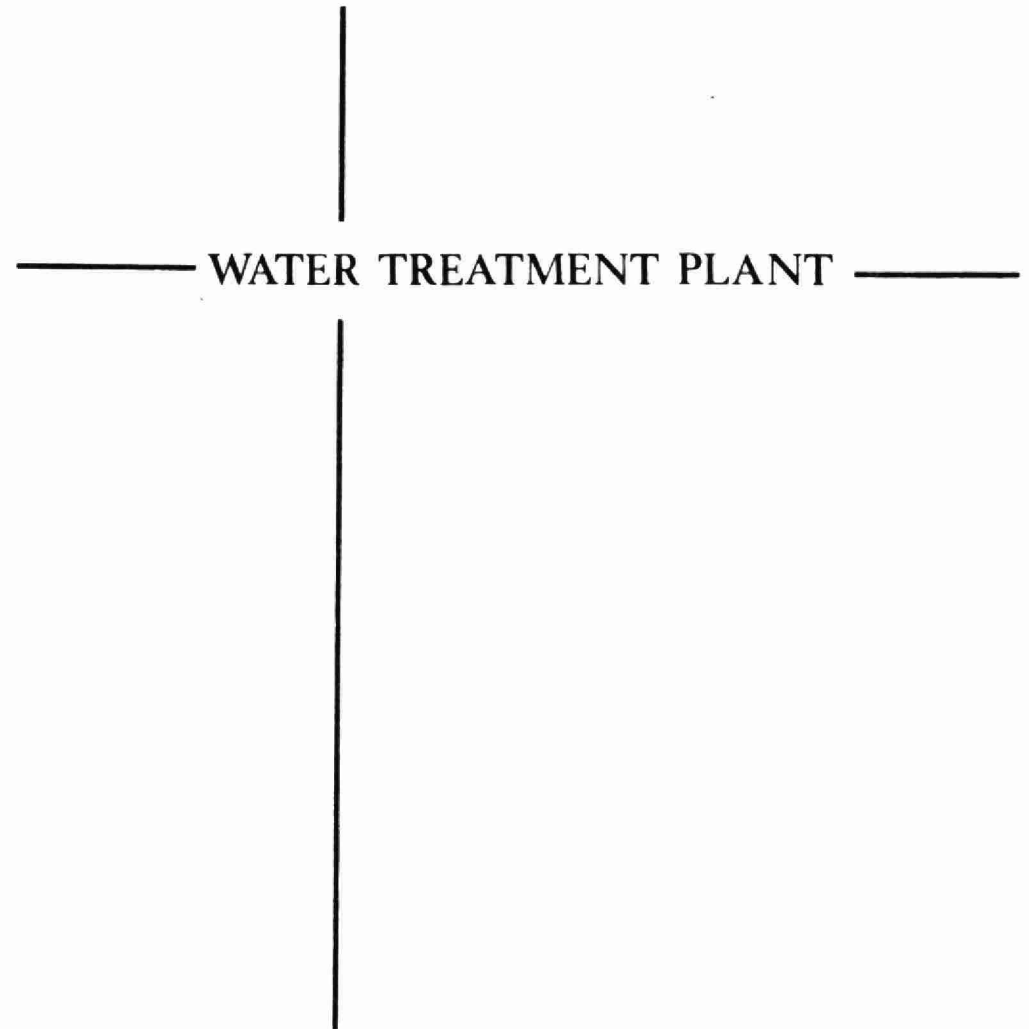
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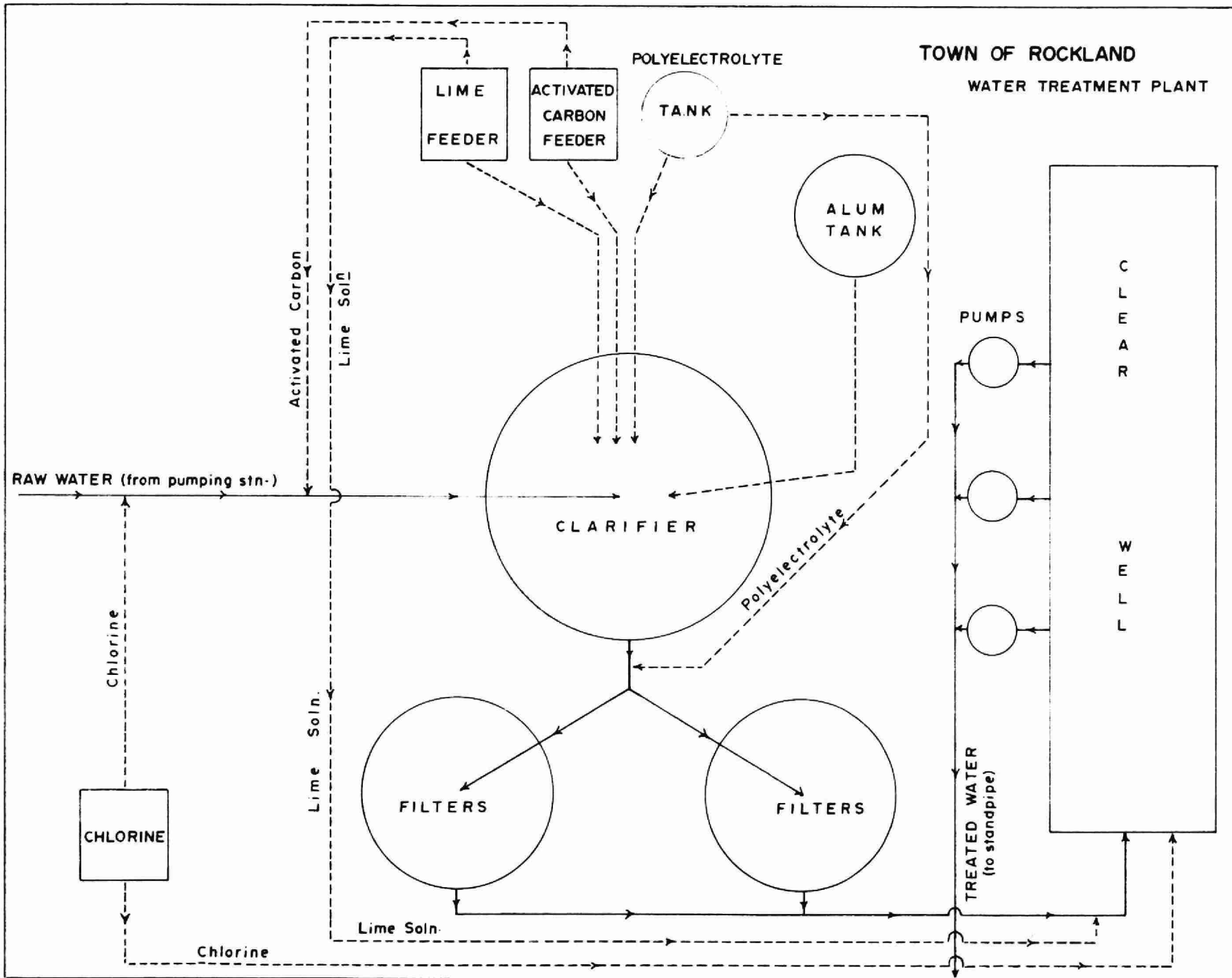
WATER TREATMENT PLANT

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WATER POLLUTION CONTROL PLANT

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DESIGN DATA

Project	Town of Rockland WTP
Project No.	5-0052-67
Design Capacity	0.80 MIGD
Raw Water Source	Ottawa River

LOW LIFT P. S.

Pump #1 200 Igpm @ 42' TDH (2 stg)
Pump #2 400 Igpm @ 42' TDH (2 stg)
Pump #3 600 Igpm @ 42' TDH (1 stg)

COAGULATION & SEDIMENTATION

Type: GRAVER REACTIVATOR
Size: One 32' dia x 13' depth
Upflow rate: 0.76 Igpm/sq. ft.
Detention: 112 min.

FILTERS

Type: GRAVER MONOVALVE (2 compartment)
Size: Two 12' dia x 10'-6"
Media: Top layer 12" of #1 Anthrafilt
Lower layer 12" of 0.45 mm torpedo sand
Filter
Rate: 2.5 gpm/sq. ft.

HIGH LIFT PUMPS

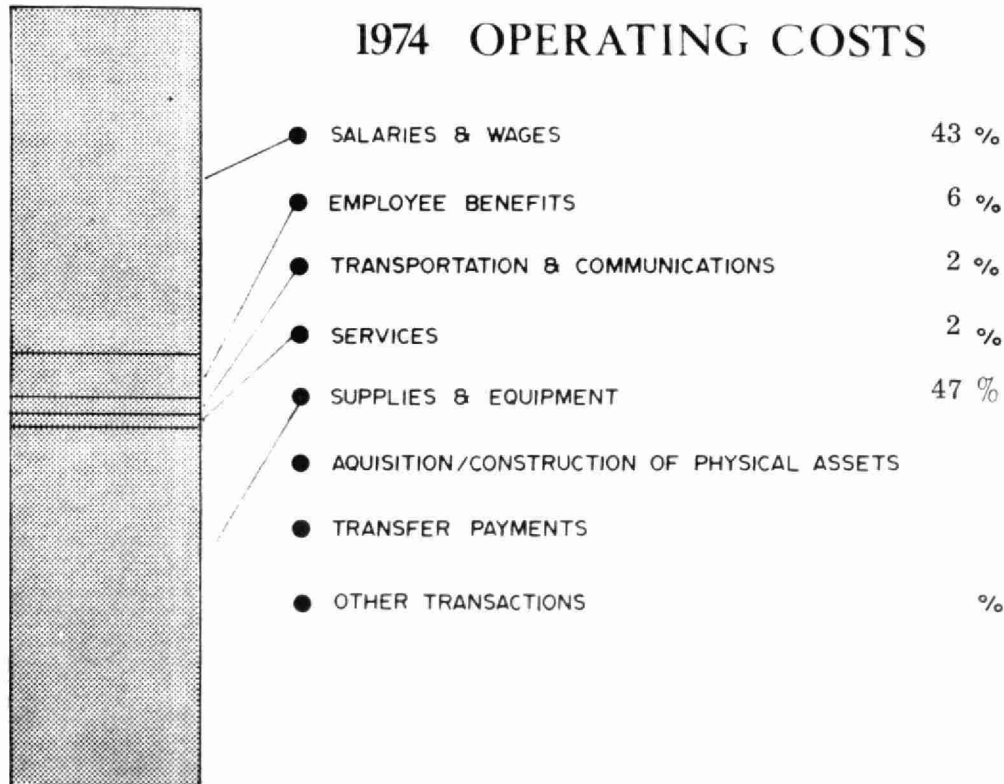
Two Crane Deming 350 Igpm @ 176' TDH
One Crane Deming 600 Igpm @ 200' TDH

STANDBY POWER

Deutz Model F86413 Diesel generator

ANNUAL COSTS

1974 OPERATING COSTS



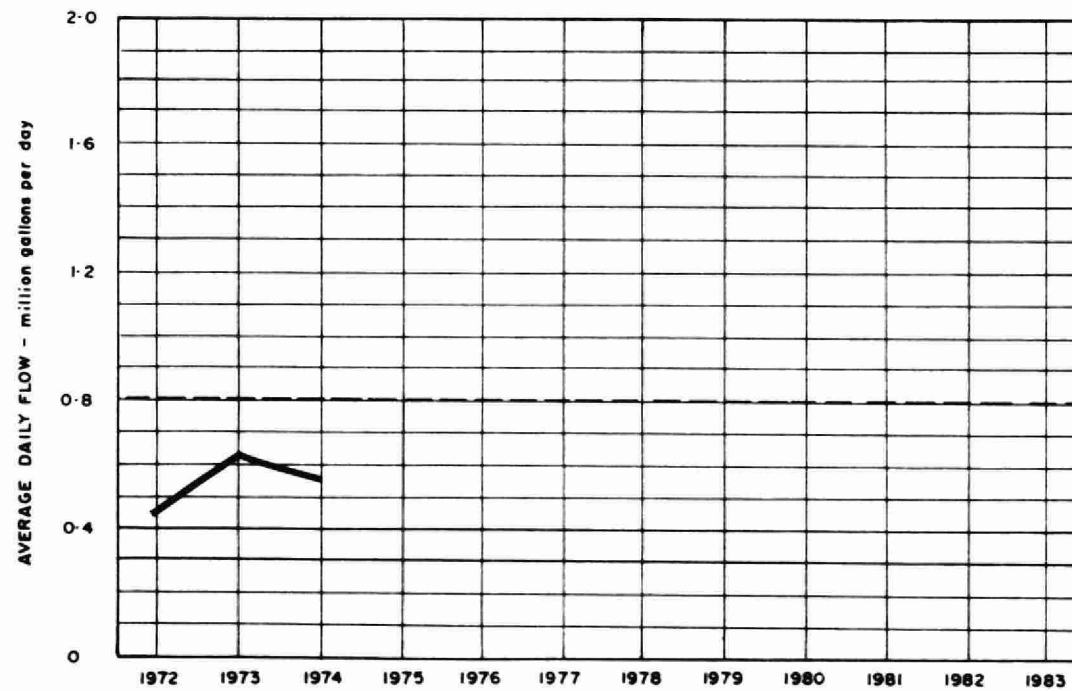
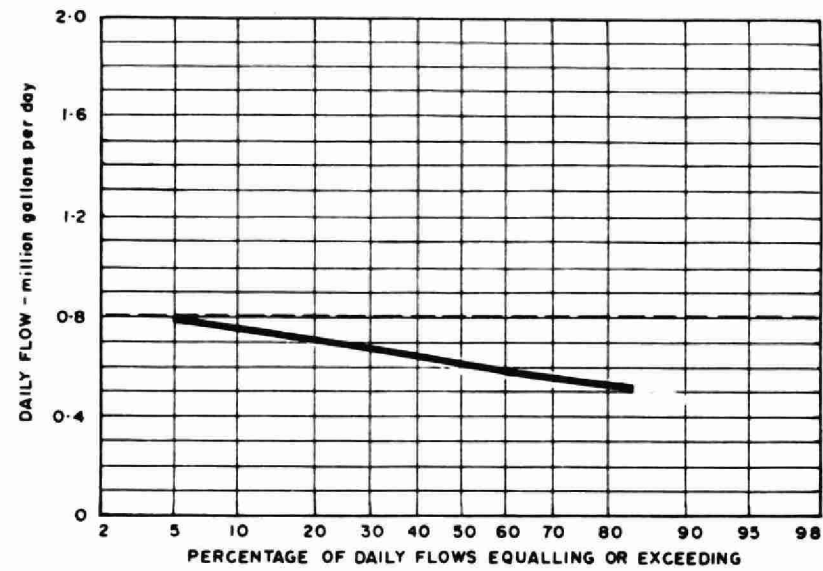
YEARLY OPERATING COSTS

YEAR	WATER TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS
			cents /1000 gal.
1974	205	47,140	23

OPERATING EXPENDITURES

Regular Staff	\$ 20,040	\$
Casual (Unclassified) Staff	-	
TOTAL SALARIES AND WAGES		20,040
TOTAL EMPLOYEE BENEFITS		2,920
TOTAL TRANSPORTATION AND COMMUNICATIONS		960
Insurance	386	
Sludge Haulage	-	
Repairs and Maintenance	492	
Other Services	251	
TOTAL SERVICES		1,129
Machinery and Equipment	1,015	
Chemicals	9,827	
Utilities	9,057	
Other Supplies and Equipment	2,192	
TOTAL SUPPLIES AND EQUIPMENT		22,091
TOTAL AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS		
TOTAL TRANSFER PAYMENTS		
OTHER TRANSACTIONS		
GRAND TOTAL	GRAND TOTAL	\$ 47,140

PROCESS DATA FLOWS



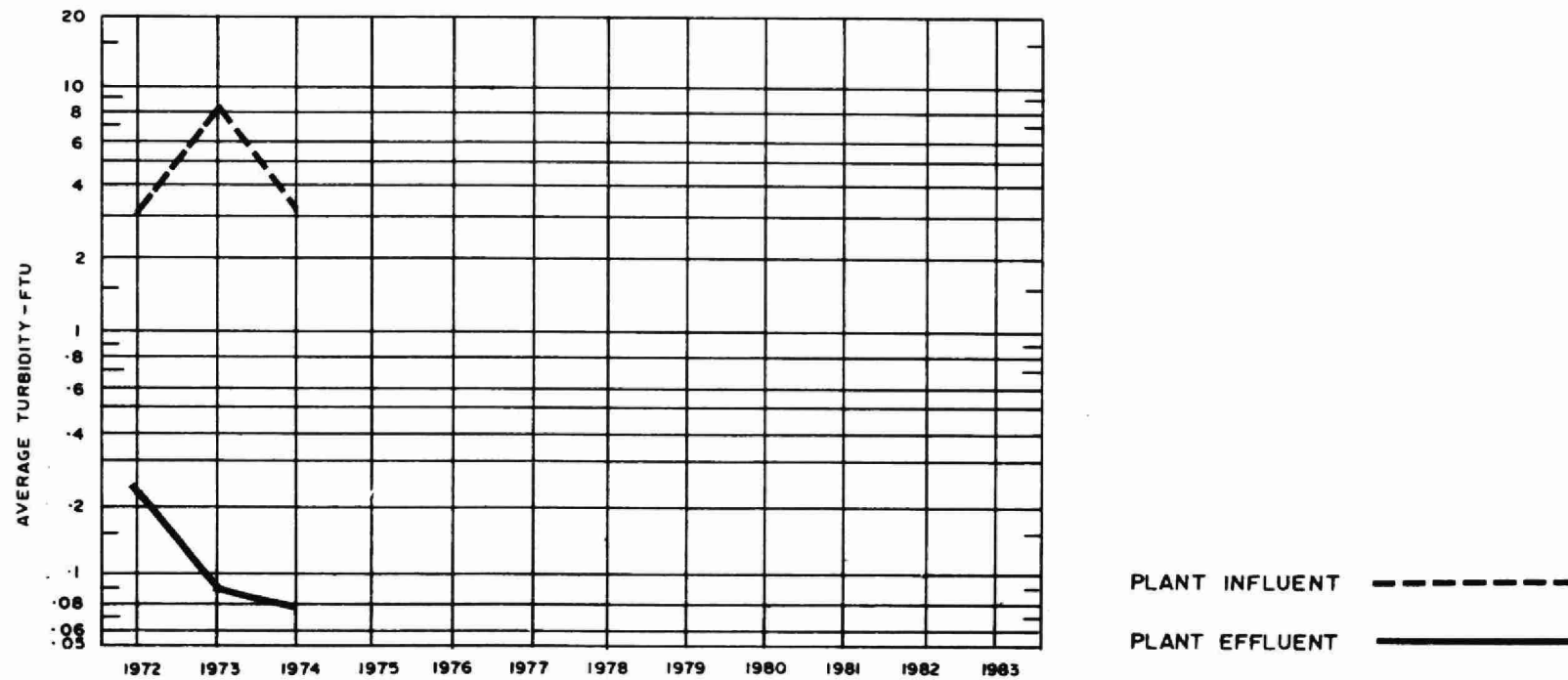
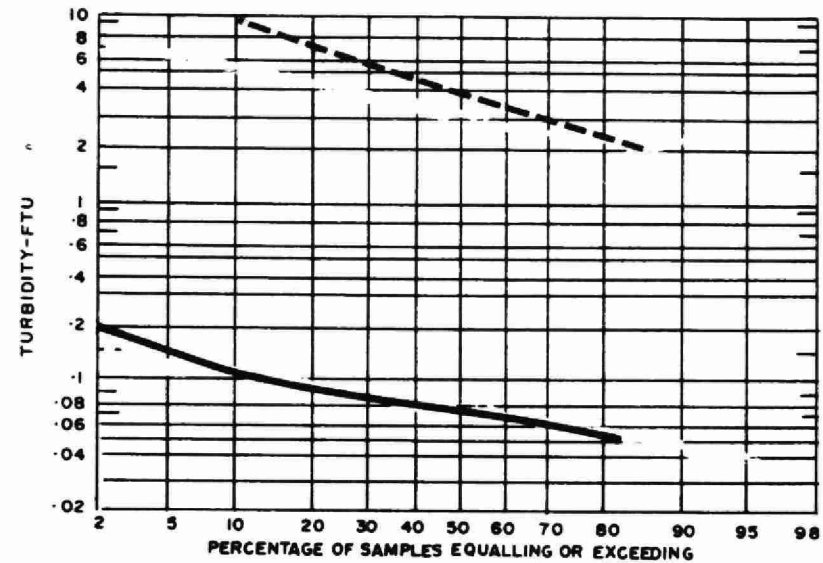
PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	TURBIDITY		COLOUR		TEMPERATURE	
							AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE ° F	MAXIMUM ° F
JAN	17.91	.58	.63		1.7	31	.20	2.70	<5	<5	33	34
FEB	17.40	.62	.64		2.0	30	.08	.10			33	33
MAR	17.69	.57	.70		1.3	<5	.10	.20			34	34
APR	14.54	.48	.57		1.9	65+	.18	2.00	<5	<5	36	42
MAY	15.47	.50	.58		7.7	62	.07	.15			48	54
JUNE	18.09	.60	.73		4.7	40	.05	.07			60	64
JULY	20.55	.66	.78		4.5	34	.07	.60	5	5	64	70
AUG	20.27	.65	.83		3.0	32	.04	.05			70	73
SEPT	16.61	.55	.66		2.7	32	.04	.04			65	71
OCT	15.77	.51	.74		3.0	30	.04	.05			50	57
NOV	14.74	.49	.61		3.6	34	.05	.06			42	47
DEC	15.87	.51	.54		4.1	33	.08	.19			35	36
TOTAL	204.91											
AVG.		.56	MAXIMUM .83	MAXIMUM	3.3	35	.08	MAXIMUM 2.70	<5	MAXIMUM <5	47	MAXIMUM 73

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33- 320	> 320						PRE - mg/l	POST - mg/l	
JAN				1	3	4	0	8	0	583	2.4	0.8	.5
FEB				1	4	5	0	10	0	605	2.5	0.9	.5
MAR					3	4	0	8	0	674	3.0	0.8	.5
APR				2	2	4	0	8	0	697	3.9	0.9	.6
MAY					2	3	0	3	0	823	4.2	1.1	.6
JUNE					3	2	0	4	0	847	3.7	1.0	.5
JULY							0		0	935	3.6	0.9	.5
AUG					2	3	0	4	0	994	4.0	0.9	.5
SEPT					4	3	0	8	1	846	4.1	1.0	.5
OCT					3	2	0	6	0	792	4.0	1.0	.4
NOV							0		0	704	3.9	0.9	.5
DEC					4	3	0	6	0	698	3.5	0.9	.5
TOTAL				4	30	33	0	65	1	9198			
AVG.	760 (NOTE - Average shown is the GEOMETRIC MEAN)									25 pounds per day	3.6	0.9	.5

TURBIDITY



TREATMENT DATA

MONTH	CHEMICALS USED					
	S E P A R A N		L I M E		A L U M	
	AMOUNT pounds	DOSAGE m g / l	AMOUNT 10 ³ pounds	DOSAGE m g / l	AMOUNT pounds	DOSAGE m g / l
JAN	120	.7	3.0	16.8	627	3.5
FEB	110	.6	2.4	13.8	624	3.5
MAR	110	.6	2.3	13.0	724	4.1
APR	65	.4	3.0	21.0	582	4.0
MAY	60	.4	3.9	25.2	705	3.9
JUNE	45	.2	4.0	22.1	692	3.8
JULY	60	.3	4.0	19.7	660	3.3
AUG	65	.3	3.8	19.0	699	3.4
SEPT	50	.3	3.4	20.5	591	3.6
OCT	55	.3	3.2	20.3	600	3.8
NOV	50	.3	3.2	21.7	608	4.1
DEC	75	.3	3.7	23.6	696	4.4
TOTAL	865		39.9		7808	
AVG.	2	.4	3.3	19.6	651	3.8

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as CaCO_3	3	45	60	30	3	71	90	52	80 - 100
ALKALINITY in mg/l as CaCO_3	3	33	44	24	3	37	50	24	30 - 100
IRON in mg/l Fe	3	.76	1.10	.35	3	<.05	.05	.05	Less than 0.3
CHLORIDE in mg/l Cl^-	3	5	5	4	3	9	11	8	Less than 250
pH in pH units	3	7.3	7.4	7.0	3	8.1	8.5	7.6	7.0 - 8.5
FLUORIDE in mg/l F^-									Less than 1.2
AMMONIA in mg/l as N	3	3.39	<10.0	.08	3	.07	.10	.01	Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N	3	.43	.60	.30	3	.17	.22	.10	Less than 1.
NITRITE in mg/l as N	1	.22	.22	.22	1	.20	.20	.20	

— WATER POLLUTION CONTROL PLANT —

OPERATING EXPENDITURES

Regular Staff	\$ 3,406	\$
Casual (Unclassified) Staff		
TOTAL SALARIES AND WAGES		3,406
TOTAL EMPLOYEE BENEFITS		-
TOTAL TRANSPORTATION AND COMMUNICATIONS		557
Insurance	87	
Sludge Haulage		
Repairs and Maintenance	9	
Other Services	41	
TOTAL SERVICES		137
Machinery and Equipment	193	
Chemicals	114	
Utilities		
Other Supplies and Equipment	725	
TOTAL SUPPLIES AND EQUIPMENT		1,032
TOTAL AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS		
TOTAL TRANSFER PAYMENTS		
OTHER TRANSACTIONS		
GRAND TOTAL	GRAND TOTAL	\$ 5,132

PROCESS DATA FLOWS



PLANT PERFORMANCE

MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND			SUSPENDED SOLIDS			PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	LOADING	INFLUENT	EFFLUENT		INFLUENT	EFFLUENT
	million gallons	mil. gal	mgd	mg/l	mg/l	pounds/acre/day	mg/l	mg/l		mg/l P	mg/l P
JAN	3.25	.105									
FEB	2.77	.099		280	13	14	98	10		3.2	3.9
MAR	4.30	.139		61	30	4	1938			2.6	3.2
APR	5.57	.186		49	16	6	19	20		1.5	1.6
MAY	4.57	.147		192	25	14	40	20		2.4	
JUNE	2.98	.099		88	36	4	50	25		2.9	2.1
JULY	2.50	.081		38		2	45			4.5	
AUG	2.31	.075		73	13	3	87	15		4.7	
SEPT	2.51	.084		162	20	7	88	30		3.9	1.9
OCT	3.04	.098		108	9	5	85	15		3.6	
NOV	2.94	.098								4.0	
DEC	3.48	.112					43			1.6	
TOTAL	40.23	-	-	-	-	-	-	-	-	-	-
AVG.		.110	MAXIMUM	111	20	6	364	19		3.3	2.8
No. of Samples	-	-	-	28	9	- -	28	7	- -	21	8

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